

--The bale is loaded into the framework as for the first and second embodiments.

However, in order to discharge the bale from the framework it is not necessary to utilise the bindings. Instead, the discharging gate 70 is retracted to its fullest extent (as illustrated in Fig. 4) and the bale is then loaded. The binding strings or tapes are then severed adjacent to the open end 24 of the framework. The hydraulic ram 72 is then actuated to displace the gate 70 longitudinally along the base plate 18 of the framework and thereby gradually displace the bale out of the framework. As for the first two embodiments, as the bale is displaced portions of the bale overhand the end of the framework and break off from the remainder of the bale.--;

Page 9, rewrite the paragraph appearing at lines 8-11 as follows:

--Although a hydraulic ram 72 is described for displacing the gate, other means could be used, such as endless chains extending along either side of the framework, worm drives connected to the gate or small hydraulic rams operating on a ratchet mechanism or a system of hydraulic rams and chains.--;

In the claims:

Cancel Claims 1-38;

Add claims 39 to 107. The added claims are set forth on separate pages attached to this communication.

REMARKS

The present application is a continuation of United States application Serial No. 09/269,808.

The foregoing amendments to the specification correct minor editorial inadequacies. Identical amendments were made in the parent application.

Original claims 1-38 have been canceled and replaced by claims 39 to 107.

Respectfully submitted,


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MARKED-UP VERSION SHOWING CHANGES MADE

In the Specification:

Page 1, the following paragraph has been added after the title:

--This is a continuation of United States application Serial No. 09/269,808, filed June 3, 1999, as a national stage of international application No. PCT/GB97/02731, filed October 6, 1997.--;

Pages 8-9, the paragraph bridging pages 8 and 9 have been amended as follows:

--The bale is loaded into the framework as for the first and second embodiments. However, in order to discharge the bale from the framework it is not necessary to utilise the bindings. Instead, the discharging gate 70 is retracted to its fullest extent (as illustrated in Fig. 4) and the bale is then loaded. The binding strings or tapes are then severed adjacent to the open end 24 of the framework. The hydraulic ram [70] 72 is then actuated to displace the gate [72] 70 longitudinally along the base plate 18 of the framework and thereby gradually displace the bale out of the framework. As for the first two embodiments, as the bale is displaced portions of the bale overhand the end of the framework and break off from the remainder of the bale.--;

Page 9, the paragraph appearing at lines 8-11 has been amended as follows:

--Although a hydraulic ram [70] 72 is described for displacing the gate, other means could be used, such as endless chains extending along either side of the framework, worm drives connected to the gate or small hydraulic rams operating on a ratchet mechanism or a system of hydraulic rams and chains.--;

In the claims:

Original claims 1-38 have been canceled.

New claims 39-107 have been added.

--39. A bale handling apparatus, comprising a bale support surface, two side walls, one adjacent each side of the bale surface, defining with the bale support surface a bale-receiving channel for receipt of a bale, and bale displacement apparatus adapted to displace the bale in a controlled manner off the bale support surface.

40. The bale handling apparatus as claimed in claim 39, wherein the bale-receiving channel is elongate.

41. The bale handling apparatus as claimed in claim 40, wherein the bale-receiving channel has a longitudinal axis that is transverse to the forward direction of a vehicle upon which the apparatus is adapted to be mounted.

42. The bale handling apparatus as claimed in claim 40, wherein the bale-receiving channel has a longitudinal axis that is parallel to the forward direction of a vehicle upon which the apparatus is adapted to be mounted.

43. The bale handling apparatus as claimed in claim 40, the apparatus being adjustable between a first position in which the longitudinal axis of the bale-receiving channel is parallel to the forward direction of a supporting vehicle upon which the apparatus is adapted to be mounted and a second position in which the longitudinal axis of the bale-receiving channel is transverse to the forward direction of the supporting vehicle.

44. The bale handling apparatus as claimed in claim 39, and further comprising a discharge opening at one end of the bale-receiving channel.

45. The bale handling apparatus as claimed in claim 44, wherein the discharge opening also serves as an opening for receipt of a bale into said bale-receiving channel.

46. The bale handling apparatus as claimed in claim 39, wherein the side walls have edges adjacent to the discharge opening that are tapered.

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47. The bale handling apparatus as claimed in claim 39, wherein the bale support surface is elongate.

48. The bale handling apparatus as claimed in claim 39, and further comprising attachment members adapted for connection of the apparatus to a vehicle.

49. The bale handling apparatus as claimed in claim 39, and further comprising means for increasing the effective length of the bale support surface.

50. The bale handling apparatus as claimed in claim 39, and further comprising a slide member which is movable to a position adjacent the bale support surface.

51. The bale handling apparatus as claimed in claim 50, wherein the slide member is pivotally mounted.

52. The bale handling apparatus as claimed in claim 39, and further comprising an agitating apparatus for breaking away portions of a bale as they are displaced along a path off the bale support surface.

53. The bale handling apparatus as claimed in claim 52, wherein the agitating apparatus is displaceable into and out of the path of a bale.

54. The bale handling apparatus as claimed in claim 52, wherein the agitating apparatus includes a rotatable member having projecting portions.

55. The bale handling apparatus as claimed in claim 52, wherein the agitating apparatus includes a plurality of agitating structures.

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56. The bale handling apparatus as claimed in claim 55, comprising a first agitating structure adapted to engage the upper portion of a bale and a second agitating structure adapted to engage the lower portion of a bale.

57. The bale handling apparatus as claimed in claim 39, and further comprising a directing structure for directing material displaced from the bale support surface.

58. The bale handling apparatus as claimed in claim 57, and further comprising a conveyor located adjacent to an end of the bale support surface.

59. The bale handling apparatus as claimed in claim 58, wherein the conveyor is movable in a direction transverse to a direction of displacement of material displaced from the bale support surface.

60. The bale handling apparatus as claimed in claim 58, wherein the conveyor is movable in opposite directions.

61. The bale handling apparatus as claimed in claim 58, wherein the conveyor includes an endless conveyor.

62. The bale handling apparatus as claimed in claim 39, wherein the bale displacement apparatus includes a movable member that is engageable with an end face of the bale.

63. The bale handling apparatus as claimed in claim 62, wherein the movable member includes a generally planar body.

A4 64. The bale handling apparatus as claimed in claim 63, wherein the planar body is one of a wall and a gate.

65. The bale handling apparatus as claimed in claim 62, wherein the bale displacement apparatus further includes at least one worm drive for displacing the movable member.

66. The bale handling apparatus as claimed in claim 65, wherein there are two worm drives, one located adjacent each side of the apparatus.

67. The bale handling apparatus as claimed in claim 39, wherein the bale displacement apparatus includes a member to which one cut end of a bale binding is affixable and a pulling device for pulling the other cut end of the bale binding.

68. The bale handling apparatus as claimed in claim 67, wherein the pulling device is a driven rotatable drum to which the other cut end is affixable and around which a portion of the bale binding is wound upon rotation of the drum.

69. The bale handling apparatus as claimed in claim 68, wherein the pulling device includes a series of clamps forming part of a conveyor apparatus and the other cut end is affixable to any one of the clamps.

70. The bale handling apparatus as claimed in claim 39 wherein the bale support surface includes a substantially smooth plate upon which the bale is slid able.

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71. The bale handling apparatus as claimed in claim 39, wherein the bale support surface includes a plurality of spaced-apart support members.

72. The bale handling apparatus as claimed in claim 71, wherein the support members extend in a direction of displacement of the bale.

73. The bale handling apparatus as claimed in claim 39, wherein the bale support surface is movable and is adapted to displace a bale supported thereon.

74. The bale handling apparatus as claimed in claim 73, wherein the bale support surface includes an upper surface of a conveyor apparatus.

75. The bale handling apparatus as claimed in claim 74, wherein the conveyor apparatus is operable to move the bale in opposite directions.

76. A bale handling apparatus, comprising a bale support surface, bale displacement apparatus for displacing the bale in a controlled manner off the bale support surface and bale guides for guiding a bale onto and off the bale support surface, the bale guides including two upright guide members, one located adjacent either side of the bale support surface.

77. The bale handling apparatus as claimed in claim 76, wherein the upright guide members are tapered.

78. The bale handling apparatus as claimed in claim 76, wherein the bale guides and the bale support surface define an elongate bale-receiving channel.

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79. The bale handling apparatus as claimed in claim 78, wherein the bale-receiving channel has a longitudinal axis transverse to a direction of forward travel of a vehicle upon which the apparatus is adapted to be mounted.

80. The bale handling apparatus as claimed in claim 78, wherein the bale-receiving channel has a longitudinal axis parallel to a direction of forward travel of a vehicle upon which the apparatus is adapted to be mounted.

81. The bale handling apparatus as claimed in claim 78, wherein the bale-receiving channel has a longitudinal axis and the apparatus is adjustable between a first position in which the longitudinal axis of the bale-receiving channel is parallel to a direction of forward travel of a vehicle upon which the apparatus is adapted to be mounted and a second position in which the longitudinal axis of the bale-receiving channel is transverse to the forward direction of the vehicle.

82. The bale handling apparatus as claimed in claim 76, and further comprising a discharge opening at one end of the bale-receiving channel.

83. The bale handling apparatus as claimed in claim 82, wherein the discharge opening also receives a bale into said bale-receiving channel.

84. The bale handling apparatus as claimed in claim 76, wherein the bale support surface is elongate.

85. The bale handling apparatus as claimed in claim 76, and further comprising attachment means for connection to the vehicle.

86. The bale handling apparatus as claimed in claim 76, and further comprising means for increasing the effective length of the bale support surface.

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87. The bale handling apparatus as claimed in claim 76, and further comprising a slide member which is movably positionable adjacent the bale support surface.

88. The bale handling apparatus as claimed in claim 87, wherein the slide member is pivotally mounted.

89. The bale handling apparatus as claimed in claim 76, and further comprising an agitating apparatus for breaking up portions of a bale as it is displaced off the bale support surface.

90. The bale handling apparatus as claimed in claim 89, wherein the agitating apparatus is displaceable into and out of the path of a bale.

91. The bale handling apparatus as claimed in claim 76, and further comprising means for directing material displaced from the bale support surface.

92. The bale handling apparatus as claimed in claim 76, and further comprising a conveyor located adjacent to the bale support surface to receive material displaced from the bale support surface.

93. The bale handling apparatus as claimed in claim 76, wherein the bale support surface is movable in order to displace a bale supported by it.

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94. The bale handling apparatus as claimed in claim 76, wherein the bale support surface includes the upper surface of a conveyor apparatus adapted to move in a direction to displace a bale off the bale support surface.

95. The bale handling apparatus as claimed in claim 94, wherein the conveyor apparatus is adapted to move in a direction to move a bale onto the bale support surface.

96. A bale handling apparatus, comprising a bale support surface adapted to support a bale, a bale displacement apparatus adapted to displace a bale supported on the bale support surface in a controlled manner along a path off the bale support surface, and agitating apparatus adapted to break up portions of a bale as the bale is displaced off the bale support surface, the agitating apparatus being displaceable into and out of the path of the bale.

97. The bale handling apparatus as claimed in claim 96, wherein the agitating apparatus includes a rotatable member having projecting portions.

98. The bale handling apparatus as claimed in claim 96, wherein the agitating apparatus includes a plurality of agitating devices.

99. The bale handling apparatus as claimed in claim 96, wherein the agitating apparatus includes a first agitating device adapted to engage an upper portion of a bale and a second agitating device adapted to engage a lower portion of a bale.

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100. The bale handling apparatus as claimed in claim 96, and further comprising means for directing material displaced from the bale support surface.

101. The bale handling apparatus as claimed in claim 96, and further comprising a conveyor located adjacent to an end of the bale support surface for directing material displaced from the bale support surface.

102. The bale handling apparatus as claimed in claim 101, wherein the conveyor directs material displaced from the bale support surface in a direction transverse to the direction of the movement of the bale off the bale support surface.

103. The bale handling apparatus as claimed in claim 101, wherein the conveyor is movable in opposite directions.

104. The bale handling apparatus as claimed in claim 101, wherein the conveyor includes an endless conveyor.

105. The bale handling apparatus as claimed in claim 101, wherein the bale support surface is movable in order to displace a bale supported by it.

106. The bale handling apparatus as claimed in claim 105, wherein the bale support surface includes an upper surface of a conveyor apparatus.

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107. The bale handling apparatus as claimed in claim 106, wherein the conveyor apparatus is operable in opposite directions.--.

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